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The Journal of Philosophy

URBAN'S AXIOLOGICAL SYSTEM

I

THE recent essays on value by Professor W. M. Urban[1] give one of the most important contemporary discussions in this field. Their author is preeminent in America as a philosopher who has given both prolonged and intensive investigation to the theory of value. At least three careful criticisms of these articles have been published,[2] and Urban has answered two of the criticisms.[3] Nevertheless there seems to be need of another criticism. The previous criticisms have been mainly expressions of disagreement concerning one detail or another, but they have given little attention to Urban's system as a unity. The present paper will attempt to envisage Urban's system as a system, and will show that the questionable doctrines in his writings follow logically[4] from one erroneous assumption.

The present writer is in agreement with Urban on the two most important problems in the theory of value. We both believe that value is irreducible to such existential categories as pleasure, satisfaction, or causality. We both believe that value is "objective in the more than social sense"; that is, we believe that the judgment about value gives us objective information.[5] These two points of agreement are so fundamental that other points of disagreement might seem relatively unimportant. There is one problem, however, which leads to very complicated mistakes if it is incorrectly treated. This is the logical problem as to what is the fundamental value category.[6] Urban thinks that "ought" is the fundamental value cate-

[1] "Value and Existence," this Journal, 13: 449–465. "Knowledge of Value and the Value-Judgment," this Journal, 13: 673–687. "Ontological Problems of Value," this Journal, 14: 309–327.

[2] R. B. Perry, this Journal, 14: 169–181. D. W. Fisher, this Journal, 14: 570–582. F. C. Bartlett, *Proceedings of the Aristotelian Society*, 17: 117–138.

[3] This Journal, 15: 393–405.

[4] Professor Urban is the best judge whether these doctrines were consciously inferred from the one erroneous assumption. Here we are concerned only with the logical implications.

[5] This Journal, 13: 683 and 455–460; also 12: 105–106.

[6] This may seem a mere technicality, but, as the following pages will show, a mistake on this point is extraordinarily misleading. This problem is obviously not "just a matter of preference."

gory. This the present writer believes to be false. From this false assumption follow numerous errors in the structure of Urban's "axiology." In the following pages an attempt will be made to show the connection betwen these errors and the doctrine that "ought" is fundamental. It will be argued that there is error both in the doctrine that "ought" is fundamental and in the doctrines which are suggested thereby. Then it will be shown that the main truths which Urban sees can be maintained by taking betterness as the fundamental value category, and that in this way the difficulties and errors of Urban's system of "axiology" can be abolished.

II

What is the fundamental value category or universal? Is there only one fundamental category or are there more than one? Most philosophers seem to have assumed rather than argued their answers to these questions. English writers have usually taken the notions of intrinsic goodness and intrinsic badness as fundamental. Sidgwick, despite some variation of opinion in the different editions of the *Methods of Ethics*, took "ought" as fundamental. So Urban takes "ought," or perhaps "ought" and "ought not," as fundamental.[7] The present writer has argued elsewhere that neither goodness nor oughtness can be taken as fundamental, and that the fundamental value universal is intrinsic betterness.[8] A detailed examination of Urban's system of "axiology" will show the many good and sufficient reasons against taking "ought" as fundamental. In fact, one of the chief merits of Urban's work is that it should for all time show the difficulties and errors involved in the assumption that "ought" is fundamental.

When ought is used as a value notion,[9] it may be used in a narrow meaning or it may be used in a wide meaning. Let us consider the narrow meaning first. This is the strictly moral or ethical meaning. As an ethical category ought has the following characteristics.

1. Ought applies only to what is practically possible. "The good is much wider than what we ought to try to produce. There is no reason to doubt that some of the lost tragedies of Æschylus

[7] Sometimes he speaks of "ought to be" as the fundamental (this JOURNAL, 13: 463 and 681). Elsewhere he mentions both "ought" and "ought not" and once he seems to say that "the latter is just as fundamental as the former." This seems to refer to positive and negative value as equally fundamental (this JOURNAL, 13: 675).

[8] This JOURNAL, 16: 96–104.

[9] Of course the purely hypothetical use of ought is not axiological. On this point Urban (15: 401–402) is correct as against Perry (14: 179–180).

were good, but we ought not to try to rewrite them, because we should certainly fail. What we ought to do, in fact, is limited by our powers and opportunities, whereas the good is subject to no such limitation.''[10]

2. Ought does not assert either intrinsic value or extrinsic value of its subject, but a combination of both. Whether an action ought to be done depends on whether the totality of that act with its motives and consequences is intrinsically better than the possible alternative totalities.[11] Thus ought indicates what may be called total value, that is, the value of the total situation in which the act occurs.

3. Ought is used in at least three senses, corresponding to the three different but similar meanings of right. It has a subjective usage, a probable or reasonable usage, and an objective or absolute usage. In other words, a complete account of ought must consider the different limitations and extensions of human knowledge in their effect upon the determination of ought.[12]

4. Ought differs from right in that ought implies uniqueness of what is morally permissible, whereas right implies that in the given situation some other act may be equally valuable and therefore also right. Several acts may be as good as possible and therefore right, but if an act ought to be done it is the single best possibility.[13]

These four characteristics of ought have determined many of Urban's doctrines. As we shall see, Urban expressly denies that he is using ought in the narrow ethical sense. But it will be apparent that the characteristics of the ethical sense of ought have influenced him nevertheless.

In the wide sense of ought, it is used in such expressions as ''ought to be.'' It is my contention that this meaning is simply an unfortunately disguised and confusing equivalent for goodness and betterness. This usage has been rather widespread, and occurs even in such writers as G. E. Moore and Bertrand Russell.[14] ''Ought to be on its own account'' is used as the equivalent of intrinsic goodness (or intrinsic positive value, as Urban phrases it). ''Ought not to be on its own account'' is used for intrinsic badness (or intrinsic negative value). Now the present writer has shown that the notions of intrinsic goodness and badness (or positive and nega-

[10] B. Russell, *Philosophical Essays*, page 6.

[11] C. D. Broad, ''The Doctrine of Consequences in Ethics,'' *The International Journal of Ethics*, April, 1914.

[12] C. D. Broad, same article; also B. Russell, *Philosophical Essays*, pages 16–30.

[13] G. E. Moore, *Ethics*, pages 31–38.

[14] G. E. Moore, *Principia Ethica*, page 17; B. Russell, *Philosophical Essays*, pages 5–6.

tive value) are complexes of intrinsic betterness or worseness.[15] If X is intrinsically good or has intrinsic positive value, then by definition the being or existence of X is intrinsically better than the non-being or non-existence of X. If X ought to be on its own account, X ought to-be rather than not-to-be. But this means that the being of X is intrinsically better than the non-being of X. So "ought to be" is a complex of betterness. The definitions of intrinsic badness or negative value have been shown to be the exact logical converses of the above definitions.

In his first article,[16] Urban confines himself to the phrases "ought to be" and "ought not to be." But in the two later articles[17] the phrase "ought rather" occurs. What does "ought rather" mean? It is clearly an expression for comparative value. When we are speaking of intrinsic value, the usual comparative notion is "better." How does "ought rather" differ from betterness? Urban nowhere suggests any difference, and it seems clear that "ought rather" means better. The only possible difference that one could suggest is that "ought rather" suggests the narrow ethical meaning, which Urban has explicitly ruled out.

We have now examined both the narrow ethical use of ought and the two wide uses in "ought to be" and "ought rather." All of these notions have been found to be analyzable into disguised forms of betterness or into complexes depending on betterness. So it is clear that our fundamental value notion should be betterness rather than oughtness.

III

If one takes ought as the fundamental value notion, one must try to meet the general arguments listed above. In addition to these troubles, there are some seven confusions or fallacies in the theory of value, all of which are caused by the treatment of ought as fundamental.

1. Ought encourages the blending or confusing of intrinsic and extrinsic values. Hence the fallacy of assuming that what is true of extrinsic value is true of intrinsic value.

2. If one asks what kinds of objects or entities are in the scale of intrinsic value, that is a plain and specific question. But if one's value notion tends to confuse intrinsic value with extrinsic, instrumental, or contributory values, then one may suppose that every object or entity has *some* value. Hence one falsely concludes that every object or entity is in the scale of *intrinsic* value.

[15] This JOURNAL, 16: 98–99. In those pages and in the present article, "good" is used to mean what Urban calls intrinsic positive value.

[16] This JOURNAL, 13: 456, 457, 461, 462.

[17] This JOURNAL, 13: 681; also 15: 396.

3. In the ethical sense, what ought to be done has nothing equally good. In other words, oughtness can not be asserted of whatever has an alternative equal in value. Hence one may falsely conclude that no two objects or entities are or can be equal in value.

4. In a specific situation, if action *X* ought to be done, then each of the other alternatives of action *X* ought not to be done. There are no actions *between* ought and ought not. So ought not is the contradictory of ought, but only within the field or universe of discourse of that specific situation. Hence one may falsely conclude that every object or entity which is in the value scale has either intrinsic goodness (positive value) or intrinsic badness (negative value). In this case there would be no indifferent entities in the scale of intrinsic value between the goods and the bads. In other words there would be no objects or entities which are intrinsically better than the bads but intrinsically worse than the goods.

5. Ought is a rather complex term depending on intrinsic betterness. Such "value qualities" as beauty also depend on intrinsic betterness, as we shall see later. If both ought and beauty are analyzed into their dependence on betterness, one will see the distinctness but co-ordinateness of the two notions. If ought is left unanalyzed, the connection between ought and beauty can be only obscured.

6. If ought is taken as fundamental, its relational characteristics will be recognized sometimes, forgotten sometimes. If ought is merely a disguise for betterness, the disguise can do no good but much harm.

7. If ought is taken as fundamental, one imagines the old dichotomy of the Is and the Ought. If one does not reduce the Ought to the Is, then one must suppose that there is some mysterious relation between the Is and the Ought.

Let us consider these seven difficulties as they manifest themselves in Urban's writings.

IV

If one takes ought as fundamental, one may say that the meaning is "ought to be on its own account." This meaning, as we have seen, is the same as intrinsic goodness or positive value. But in the vast majority of its uses, ought refers essentially to the value of a further end or a larger totality of which it is an instrument or a part. In its strict moral sense ought refers to the value an act has in relation to the total situation of which it is a part.[18] Consequently the use of ought gives a constant temptation to forget that intrinsic value is the logical basis of the study of value.

[18] For proof, see the above mentioned article by C. D. Broad.

As we might expect, Urban first limits his discussion to intrinsic value or oughtness, but subsequently he seems to forget this distinction in his main arguments. "It need scarcely be said that an ultimate definition of value is concerned only with intrinsic value, all extrinsic or instrumental values going back ultimately to concepts of intrinsic value."[19] Later Urban explains that the relational characteristics of "ought rather" do not do away with the intrinsic nature of value. In intrinsic value we shut out the relation of means to ends but not the relation of more or less.[20] But when Urban argues about value he seems to forget all about the qualification of value as intrinsic. Thus in one passage[21] he asserts that wherever there is interest there is value. Now clearly this is not true of intrinsic value. There are many things which we are interested in only as means or instruments. So if interest is the test of value, these things have only extrinsic value. Yet Urban uses this argument to prove that all objects or entities have a place on the scale of intrinsic[22] value. This fallacy was caused by the confusion of extrinsic values with intrinsic values, and this confusion seems to have been caused by the use of ought as fundamental.[23]

V

From the confusion of intrinsic and extrinsic values, there follows logically what we may call Urban's Law of Universality. This is the doctrine that "every object has some place in the world of value." "Every object falls under the category of value just as necessarily as under the category of being."[24] In other words, no object or entity (whether existent or not) is "value-free."

We must distinguish two possible interpretations of this law. In the light of its context and the use which Urban makes of it, it seems to mean that every object has a place in the scale of *intrinsic* value.[25] On this interpretation the law would be very important, if true. But we shall see that it is not true. On the other interpretation, Urban may mean merely that every object has *some*

[19] This JOURNAL, 13: 452.

[20] This JOURNAL, 13: 681.

[21] This JOURNAL, 13: 675–676.

[22] He does not say on this page whether it is intrinsic or extrinsic value. But the context clearly requires the assumption that he is proving something about intrinsic value.

[23] Another instance of the confusion of intrinsic and extrinsic values is found in the remark that "we can deduce the value of an object from its nature as little as we can its existence" (13: 674).

[24] This JOURNAL, 13: 685 and 675–677.

[25] This JOURNAL, 13: 452–460 and 681.

value. In this case, the law would perhaps be true, but too unimportant for the use which Urban makes of it. Urban nowhere explicitly states which interpretation should be followed, but we may reject this second interpretation for the following reason. To say that an object has *some* value may mean either that the object is itself in the scale of intrinsic value or it may mean that the object has certain relations to something else which is in the scale of intrinsic value. If an object has no value intrinsically but is a cause or a part of something which is in the scale of intrinsic value, then the object may be called extrinsically valuable. I know of no proof that every object is actually a cause or a part of an intrinsic value, but clearly every object might be such. But this is unimportant. It is surely a trivial assertion to say that every object is or might be either in the scale of intrinsic value or among the causes or parts of intrinsic values. What we wish to learn from a study of value is knowledge concerning what objects are in the scale of intrinsic value and what are their comparative values. So we are forced to conclude that Urban means not his second interpretation, but the first one to the effect that every object is in the scale of intrinsic value.

Urban's proof for this law of universality is as follows:[26] "All objects, as objects, are of interest either actually or potentially, and wherever there is interest there is value." Several objections might be made to this argument, but the most important objection is as follows: If we grant that interest proves value,[27] what sort of value does any sort of interest prove? Does it prove intrinsic value? It seems that there are many objects which we are interested in only as means, instruments, or parts. So this type of interest can not prove intrinsic value but only extrinsic value. If we were interested in objects only on their own account and never on account of their results, the present objection would be out of place. To argue from the assumed universality of interest of any sort to the universality of intrinsic value is clearly fallacious.

I know of no valid proof that every object is in the scale of intrinsic value. This is no place to argue the very difficult problem concerning the inclusions and exclusions of the scale of intrinsic value, but let us consider a few examples. Urban likes to dwell on Meinong's "round square," an impossible object but one to which Urban attributes value.[28] Probably few people have attributed value to round squares. Of course the mental process of thinking about

[26] This JOURNAL, 13: 675–676.

[27] Surely Urban should give some proof for this assumption, since he does not agree with Perry that value is to be defined in relation to interest.

[28] This JOURNAL, 13: 676 and 679.

round squares did have a certain extrinsic value (positive or negative) in the formation of the theories of Meinong and Urban. But do round squares themselves have any intrinsic value? The present writer must confess his inability to think of them as being intrinsically better or worse than anything. Then let us consider the rather numerous numbers. Does every number have a place in the scale of intrinsic value? Does 12 have intrinsic positive value and does 13 have intrinsic negative value? It would be unfair to ask Urban to give the relative value of all numbers, but surely he should explain the value of the more frequent numbers. Or shall we not say that the scale of intrinsic value does not include numbers among its members? So there are some objects of thought which are not in the scale of intrinsic value, and Urban's law is false.

VI

What may be called the law of inequality is stated by Urban in the following terms: "Of any two values one must be greater than the other."[29] "When any two value objects are brought into relation, one must be higher than the other."[30] Urban seems to think that this follows logically from the fact that values form a "system of higher and lower."[31] But of course the logic of relations and series does not warrant any such inference. There are "series of levels" in which the members of any given "level" are in some specified sense equal or equivalent to one another.[32] In other series this is not the case. So it is a purely empirical question to be investigated whether or not the value scale is a series of levels. Consequently Urban's supposed law is entirely without proof.

Apparently Urban was led into this theory by the following facts. In dealing with the moral use of ought, we say that X ought to be done only if the doing of X stands out as better than every alternative. If another alternative is just as good, we say that either is *right*.[33] So if an act ought to be done, no other act can be equally good. On the supposition that ought is the fundamental value notion, the law of inequality would perhaps be plausible.[34]

Empirically it must be admitted that many objects *seem* to be

[29] This JOURNAL, 13: 677–678.

[30] This JOURNAL, 13: 677.

[31] This JOURNAL, 13: 677.

[32] See, for example, J. Royce in the *Encyclopedia of the Philosophical Sciences*, Vol. I., pages 118–119.

[33] G. E. Moore, *Ethics*, pages 31–38.

[34] G. E. Moore, *Ethics*, pages 35–36. Even if ought were fundamental, it might still be the case that two actions which ought not to be done were equally objectionable, and so equal in value.

equally valuable. It would require strong proof to offset this seeming. No proof has been given.[35]

VII

There is another doctrine which we may call the law of duality. This is stated by Urban as part of his law of universality, but it is really separate in meaning. According to this theory every object in the world of value is of positive or negative value. There is nothing in between the goods or positive values and the bads or negative values.[36] Let us restate this law. We may say that there is no entity which is intrinsically better than every intrinsic bad, but intrinsically worse than every intrinsic good. Is this law true?

Urban himself gives no proof for this law. But it would follow logically from the following facts about ought. Among the alternatives in a moral choice, there are none which come *between* the act which ought to be done and the acts which ought not to be done. Inside the group of those alternatives, whatever is not *what ought to be done* is *what ought not to be done.* So here a law of duality does hold. But this does not prove that intrinsic positive value or goodness is the contradictory of negative value or badness.[37] Other proof there is none.

Urban's law of duality might be proved by his law of inequality. But, as we have seen this law of inequality is false. An entity is indifferent, in the sense of being between the intrinsic goods and the bads, if its being or existence is intrinsically equal in value to its non-being or non-existence. This would mean that its being is neither better nor worse intrinsically than its non-being.[38] But if nothing is equal in value to anything else, then nothing could be indifferent in this sense. The notion of indifference within the value scale is defined by value equality, so if there were no value equality there would be no indifference in this sense. Since we have seen that there is value equality, there may be indifference within the value scale.

It seems clear that bare negativity, non-being, or non-existence (however these categories are explained) can never involve either intrinsic goodness or intrinsic badness. Yet merely negative facts seem to be on the scale of intrinsic value. Concerning an intrinsic evil we say that its non-existence would be better intrinsically than

[35] Note the reference to "equivalence" in Urban's earlier *Valuation*, page 142.

[36] This JOURNAL, 13: 675.

[37] As Fisher has pointed out (this JOURNAL, 14: 574), there is a plain inconsistency in Urban's remarks on this point.

[38] This JOURNAL, 16: 98–99.

its existence. Its non-existence is neither good nor bad intrinsically, but is between the goods and the bads. So the law of duality can not be true.[39]

VIII

If ought is left unanalyzed and "fundamental," then its relation to the other value categories is seriously obscured. As an example, let us consider beauty and its relation to ought. Now ought depends on betterness but on total betterness. Ought can be determined only when reflection has investigated the consequences of an act and reckoned with all of the ascertainable values. Beauty is a category not involving total values in this way. If the contemplation of a work of art has intrinsic value, we may say that the work of art is beautiful irrespective of the moral, economic, or other consequences involved. So a work of art may be beautiful even though it may be condemned as a work which ought not to be produced or contemplated. The esthetic judgment deals with the intrinsic value of a somewhat isolated experience and it neglects the extrinsic or instrumental values which may be involved. Thus both ought and beauty depend on intrinsic betterness but in quite different ways.[40] The difference is that ought is based on a wider survey of values. Hence it may be argued that if ought and beauty conflict (that is, if a beautiful object ought not to be produced or contemplated), beauty must give way as the narrower concept.

Urban misunderstands this complicated relationship, and says that beauty is a subjective "quality" which is felt, whereas ought is something objectively judged.[41] But there is an esthetic judgment as well as an esthetic feeling, and there is a feeling of oughtness as well as a judgment of oughtness. Urban seems to treat ought as being on an entirely different plane from beauty. Beauty, he thinks, is a subjective value quality, whereas ought is objective value. But since both ought and beauty are analyzable (though in different

[39] Urban's remarks on the value of non-existence are partially based on a natural misunderstanding of a sentence by the present writer in a one page abstract (this JOURNAL, 12: 105–106). I had said: "All facts about non-existence are equal in value. (Equal in value means neither better nor worse.)" Urban quotes this once in a slightly altered form (13: 678). Then he changes it entirely in the quotation: "All facts about non-existence are neither better nor worse" (13: 679). My own doctrine is: "all of the negative or non-existential facts in the value scale are indifferent or neither good nor bad" intrinsically. (This JOURNAL, 16: 98.) Equal in value may be defined to mean neither better nor worse *than one another*. Obviously one would not assert value equality of what is entirely outside the scale of value.

[40] For a very brief discussion, see this JOURNAL, 16: 102–103.

[41] This JOURNAL, 13: 456.

ways) into complexes of intrinsic betterness, it is clear that no such difference of kind can be found between them. Urban has been misled here by his assumption that ought is a fundamental and unanalyzable value category.

IX

In his first article Urban speaks only of "ought to be," but in the two later articles he speaks of "ought rather." Now "ought rather" is clearly a relation. If value is a relation, surely the notion of betterness is the clearest and simplest to use. The conception of intrinsic betterness is easily distinguished from extrinsic values, and none of the "moral" limitations of ought are involved. If one uses better as fundamental,[42] one will always be conscious of the relational character of value, and one can study and analyze value according to the facts of the logic of relations. As far as "ought rather" differs from better, it differs only to disguise and confuse the facts.[43]

There are times when Urban's language almost makes him agree that betterness and not ought is the fundamental value notion. He says explicitly that *ought is deduced from betterness.*[44] But clearly one does not deduce ought from better, unless better is more fundamental.

Urban even says in one place[45] that "the relation 'better than' can be seen to lie in the nature of value as such." Yet this admission is never followed up. That better is fundamental is half seen, but there is little realization as yet of the consequences of this admission.

X

Urban analyzes the conceptions of existence and reality. But since he takes ought as fundamental and unanalyzed, he becomes entangled in the old mystifying opposition between the Is and the Ought. To summarize and criticize all of the debatable points in Urban's rather lengthy third article[46] would be impossible here. Urban himself recognizes the difficulties and "antinomies" in his discussion. So we may confine ourselves to a short positive discussion of those points on which light is thrown by the theory that value is a relation.

If value is not subjective, then value is in some sense real. The feeling of value implies the feeling of the reality of the value cate-

[42] Or the notion of "worse." See this JOURNAL, 16: 97.

[43] As the previous pages should have shown. Incidentally it may be mentioned that ought is a one-many relation, whereas better is a many-many relation.

[44] This JOURNAL, 13: 681; 14: 315, note 19; 15: 396.

[45] This JOURNAL, 13: 681.

[46] This JOURNAL, 14: 309–327.

gory.[47] About this real or objective value there may be true knowledge in what may be called value judgments. These value judgments will be true or false in the same general way that other judgments are true or false. But they will differ in that they refer to the value relation rather than to such relations as time or causality. They may also differ in their psychological antecedents from such judgments as those of sense-perception. But they are not to be contrasted with "truth-judgments."

The complete object of a judgment, may, following Meinong, be called an "objective."[48] Then a judgment about value will refer to an objective, which includes what we mean by value. But this calls for analysis. When we judge that X is intrinsically better than Y, X and Y may be called value-objects, but by value we mean the relation of betterness which holds between X and Y. Value is a relation, not an objective.[49] Relations are real, and the value relation betterness is real. I see nothing mystifying in this.

If the value relation is real, must the two terms of the relation be actual existents? Clearly not, as Urban admits.[50] Doubtless the judgment of value arises in the comparison of actual experience, but it is soon extended to objects of thought and imagination. It is even extended to mutually exclusive alternatives of action, only one of which can be actualized. We may properly value what never actually exists, but of course our valuation is based upon our experiences of actualities. So the elements of what we value must have been actually experienced. But the specific construction may be new. Thus in a Utopia, the total condition valued may never exist in the past, present, or future, but the elements used in describing the Utopia are drawn from experiences of actual existents.

If ought is taken as fundamental, one might assume that value implies possibility, because the moral use of ought implies that the action which ought to be done is possible. But this would be fallacious. It is certainly clear that both of two valued objects may not be "compossible."

Since judgments about value refer to the real relation of betterness, we can have no complete account of realities (or Reality, if you please) without an account of value.

As to the value of the whole of reality, there are some preliminary questions? Can we make judgments about the whole of reality? How would such judgments deal with the difficulties at the basis of

[47] See Urban's *Valuation*, page 22.

[48] The word "objective" is unfortunate as suggesting the subjective-objective controversy.

[49] Urban seems almost to admit this, this JOURNAL, 13: 681.

[50] This JOURNAL, 13: 463, and 14: 319.

Russell's theory of logical types?[51] There is no reason why value may not be ascribed to facts about totalities, but only about totalities which are capable of being judged.[52]

As to "degree of reality," anyone can use the word reality in a eulogistic sense. The question to be asked is whether or not such usage leads to clear or confused thinking. Urban seems to think that this usage is necessitated by the law of universality, that every object is in the value scale. But we have seen that this law is false. It must be insisted also that logical importance is not the same as intrinsic value. These two points undermine Urban's proofs.[53] I doubt if we know enough about either metaphysics or "axiology" to be able to give a trustworthy discussion at present.

XI

With this very fragmentary criticism of Urban's doctrine of reality and value, the present set of criticisms is ended. We have seen that the central flaw in Urban's system of value is the assumption that ought is the fundamental value category. We have seen the numerous errors and fallacies which almost inevitably follow from this false assumption. But to make these criticisms must not be taken as a condemnation of Urban's work. Not only is Urban correct in his fundamental doctrines of the indefinability and reality of value. The system he has worked out is a remarkable help in showing exactly what are all the main consequences for "axiology" of the attempt to take ought as fundamental. The clear thinking out of one point of view, even though it contains an element of error, is more helpful to the advancement of knowledge than the usual doctrines which are not thoroughly thought through.

If Urban were to accept what might be called "meliorism," the doctrine that intrinsic betterness is the fundamental value category, his entire system would need going over. Corrections in many places would be required. But the main outlines of his work would remain, only bettered.

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[51] A. N. Whitehead and B. Russell, *Principia Mathematica*, Vol. I., Ch. 2.

[52] Note the strange opposition between Urban and Fisher, this Journal, 13: 454 and 14: 575.

[53] This Journal, 14: 326 and 327.

SOME PHILOSOPHIC ASPECTS OF SCIENTIFIC RELATIVITY

IT is perhaps not altogether premature to attempt to outline some of the essentially philosophic aspects of the recent development of the physical theory of relativity, if only because of the extravagances in which both popular and scientific "philosophy" have indulged. Perhaps not since the Darwinian controversy have concepts so fundamental been subjected to criticism; and the reason for this is simple. All the basal elements of the purely scientific theory itself are identical with many of the central concepts of philosophy—space, time, simultaneity, motion; even the mere name itself, relativity, is sufficient to arouse the pugnacious instincts of every true philosopher. Confusion therefore is more than usually possible, and thinkers may again, as was the case with evolution, be drawn away in a vain pursuit of philosophic jack-o'-lanterns. The moral (if I may venture to suggest it) is obvious; there should be a much closer connection between philosophy and science. It is true that every step in advance makes this more difficult to achieve; but as things are at present, the results of scientific research far too often fall like a bomb into the philosophic camp, with dire results to its traditional serenity; as for the philosophies of scientists themselves, perhaps the less said the better. But Philosophy, it must be remembered, holds an inalienable lien on the whole of experience; which in its scientific aspects is fast becoming exceedingly complex.

As I have already suggested, the term "relativity" itself accounts for much of the prevailing confusion. It is absolutely essential to disregard, at all events to begin with, its long and involved philosophic history, and to use it, completely devoid of philosophic import, as it was employed originally with a purely scientific and quite definite meaning, which implied nothing more than that the observation of phenomena is determined only by the observer's velocity relatively to the observed system.[1] Even its widest later applications are concerned only with the relative velocities of systems and observers, and with the mathematical and other scientific (but not philosophic) implications of these. It is therefore vitally important to bear in mind that the theory has, to begin with, no bearing whatever upon the problems of the relativity of knowledge, of knower and known, or on the subjectivity, in the Kantian or any later sense, of Time and Space. So far as these questions are concerned, matters stand as they did previously; no school of thought is entitled (so

[1] Campbell, *Modern Electrical Theory*, p. 381. Cunningham states this in terms of objects and ethereal media *Principle of Relativity*, p. 155.

far) to find in the scientific results any support, much less any conclusive proof, for its particular contentions; philosophically the formation is "as you were."

A second source of obscurity has lain in the apparent self-contradictory character of the theory; a defect, however, which is wholly due to omissions in its exposition, and which is removed entirely when all the facts are considered. Simultaneity, it is stated, has lost its meaning; one and the same event, again, may be both before, and after, another event; even objective[2] space may be "warped." The illogicality of these statements, in this form, is evident; but it is not peculiar to them alone, for every partial truth, expressed without its necessary qualifications, is similarly illogical. But if we say, with greater accuracy and completeness, that events simultaneous for one observer are not therefore necessarily so for another; or that what is "before" for *A* may (or must) be "after" for *B*, or even for *A* himself when certain conditions of his observation change; or that an imaginary space-time continuum may be heterogeneous; or that "motional phenomena become timeless phenomena in four-dimensional space";[3] we merely generalize a principle which is frequently a matter of ordinary simple experience, as when the flash and report of an explosion are simultaneous for one observer but not for another, or when a spatial figure expresses a temporal process.

But the delicate phenomena and refined calculations which are involved are both so remote from ordinary intelligence that it is exceedingly difficult to form any conception of the actual concrete bearings of the theory; it is plainly impossible to construct any image of the velocity of light or the size of an electron; but these are after all obstacles rather of practical experience than of pure theory; and if the new principles could be applied to familiar occurrences the greater part of their mystery would disappear.

Such an application becomes possible if we imagine two observers who have always been completely blind, and whose knowledge of distant phenomena depends wholly therefore on their sense of hearing. Consider, *e.g.*, simultaneity and synchronism, and the fact that a clock which is at rest relatively to a normal observer and is ticking uniformly, will, if it moves continuously away at a fixed speed, thereupon tick for him at a slower rate, if he remains at rest and all other conditions are unchanged; in other words, if the clock while at rest (relatively to him) kept exact time with his watch, it would, while moving away, lose time as compared with his watch; but the velocity of light naturally makes the actual observation of this impossible.

[2] Objective, *i.e.*, as content of experience; but I should not myself question the wider "realist" position.

[3] Cunningham, *op. cit.*, p. 191.

But instead of clock and watch, let us take two automatic guns firing simultaneously, and with exactly the same intervals between the reports when they are close together and also close to an observer. If now one gun remains in position still close to the observer, while the other moves quickly away, it is obvious that the simultaneity will cease, and a longer and longer interval will elapse between the reports from the near gun, and the corresponding[4] reports from the distant moving gun; which means that the rate at which the observer heard the moving gun fire would alter; it would lengthen as compared with that of the fixed gun, which latter would thus come to fire (apparently) at a faster rate than its moving fellow. On the other hand if a second observer accompanied the moving gun his experience would be directly converse; to him the stationary gun would appear to fire more slowly than his own; and again if both observers with their respective guns were moving in varying directions and with varying velocities relative to each other, the comparative time-keeping of their guns would vary correspondingly.

Thus the two guns with their audible reports take the place of the two timepieces with their visible dials; and here it may be argued by the philosophically minded that the audible phenomena are mere "appearance" and that the guns "really" still retain their original synchronous firing. Now in one sense this argument is quite valid; but in another it is not; for its validity depends on all the conditions which ultimately determine human experience. To the normal observer, who can both hear and see, this contrast between reality and appearance is both inevitable and justifiable. But we have supposed our two observers to be congenitally blind, to lack therefore all experience of light phenomena and visible motion, and to derive all their knowledge of distant phenomena solely from the sense of hearing. For them therefore there can arise here no distinction between reality and appearance; what is heard is "real," and the audible differences in the firing rates of the two guns actual and ultimate.

Now these differences (audible, but to the blind observers real) depend on the velocity of sound waves; and all that the theory of relativity does is to trace and calculate the analogous consequences which the velocity of light must produce in normal human experience. If we substitute clocks for guns, sight for hearing, and the velocity of light for that of sound, there must arise an analogous discrepancy between the time rates of moving clocks, and therefore

[4] Corresponding that is in serial order, and disregarding fortuitous coincidences arising from the transmission of sound; as well as the assumption that the velocity of light is everywhere and always a constant; this prevents the light phenomena being *strictly* analogous to those of sound.

further, since all our measurements are normally based on time and space measurements, between physical phenomena when observed by different observers who are in different physical systems moving relatively to each other. In normal experience, vision corrects hearing; but we possess no sense faculties whatever which can in a similar manner check and correct the conscious experience derived through sight. That experience is ultimate for us, exactly as hearing is ultimate for our blind observers; no distinction between reality and appearance can possibly arise; what "really" happens[5] is what light phenomena reveal to us as happening; and then the scientific principles of relativity must be taken into account if our observations and calculations are to accord with "reality." They are no more illogical, contradictory, or revolutionary, than the theories of Copernicus, Galileo, and Newton; they merely, as these did, further correct the rough verdicts of our unrefined experience and yield exacter laws whereby we must express the content of that experience.[6]

Indeed, the principle, in spite of its name, does not even imply that we are wholly deprived of absolute standards; it merely means that we are free to determine these as we please, provided we accept *all* the results of our choice; it follows further that a proper selection will greatly simplify argument and calculation. Thus the "proper time" (*Eigenzeit*) of a system with reference to which a body is "at rest," as measured by observers moving with the body,[7] is unvarying and in that sense absolute; and Professor Eddington maintains that "One part of the World differs from another—an intrinsic absolute difference . . . the equality of two tensors in the same region is an absolute relation . . . the vanishing of the left-hand side denotes a definite and absolute condition of the World."[8] Just as sight would discover an "absolute" to our supposed blind observers, so thought may attain an absolute which is truly such for normal experience.

Nor again does the manner in which the theory treats simultaneity and other space and time attributes justify the contention that space is "warped," or afford the slightest fresh ground for the view that it and time are subjective. Some recent thinkers who have

[5] *I.e.*, in actual observation. We can still go beyond this in thought, but then the very data on which thought operates are derived from observation. *Cf.* previous note on the velocity of light.

[6] Contrast Bertrand Russell—"Demands a revolution in our conceptions of space and time" (*English Review*, Jan., 1920, p. 11); and Eddington—"The theory has introduced new conceptions of time and space," *Mind*, April, 1920, p. 145.

[7] Therefore of course themselves "at rest" in that system.

[8] *Loc. cit.*, pp. 148, 150, 151. The "World" is "the aggregate of all the point-events" (p. 147).

previously held this position now appear to regard it as finally established; while "realists" (so far as I know) have done little to question this attitude. But both schools alike, I think, have fallen victims to a profound misconception, which many scientists (particularly mathematicians) have avoided. They have overhastily confused the mathematical concepts which represent certain *abstract aspects* of time and space with those entities themselves as ontological; and thus the continuous variance of the space-time continuum in a field of force is expressed as a "bending" or "warping" of space, and the dynamic equivalence between gravitation and acceleration (expressed by the Principle of Equivalence) is represented as being the active operation of space-time itself; thus Russell: "attributing the phenomena of gravitation to properties of the space-time belonging to a gravitational field."[9] But any such extensions of the scientific theory are as yet wholly illegitimate, and certainly find no grounds in the work of its founders; it would be as logical to argue that because a curve may represent a changing force, therefore energy and time must be distorted. Philosophic arguments are (so far) scarcely affected in any degree, and upholders of neither the subjectivity nor the objectivity of time and space derive much if any support for their views from the new developments, if these are confined within their proper limits.

Thus Cunningham begins by insisting on the necessity of "drawing a clear distinction between the mode of *measurement*, and the *nature* of space and time"; the theory "emphasizes the derivative nature of *metrical* space and time, though it has nothing to say against the reality of perception—is completely dependent on such perception." But when thought analyzes the content of this perception, it is possible for it to detach certain purely abstract aspects, so that *e.g.* "in the four- dimensional world of Minkowski space and time combine into a single *concept*"; and this Cunningham rightly terms "the introduction of *mind-stuff*,"[10] a perfectly logical procedure if we but remember the character of what is thus introduced and refrain from objectifying its necessarily imaginary attributes. For the "four-dimensional world of Minkowski" is not a universe which is more truly real than the spatio-temporal world of perceptual experience; it is merely one which may be (in thought) substituted for either of two relatively moving physical systems, so that motion in that system, when observed from the other, must be regarded as occurring in this imaginary four-dimensional space-time concept and correctly calculated only on that supposition.[11] Thus "space

[9] *English Review*, Jan., 1920, p. 14.

[10] *Principle of Relativity*, Pref., pp. 8, 156, 87; italics mine.

[11] The imaginary element appears in the employment of $\sqrt{-1}$ in dealing with the time coördinate.

and time become particular aspects of a single four-dimensional concept, and the motion of a point in time is represented as a stationary curve in four-dimensional space''; and exactly in the same way "force and its rate of working may combine into a single concept in which distinction [is] lost, emerging only when we again separate space and time;'' or in general, "All relations shall be vectorial relations in four-dimensional space.''[12] It may be worth remarking that a "dimension'' is any definite concept, which may (further) be absolutely defined in terms of simpler concepts (dimensions), and which when combined, as thus defined, with number, may constitute equations; time and space therefore are themselves merely instances of the general class of "dimensions'' as a whole.

These methods and principles, however, do not affect in the remotest degree the philosophic problems of objective reality, the pros and cons of which remain what they were before; they merely express the laws which relate the appearances of such reality to different observers, or to the same observer under different sets of conditions. That different conditions necessitate different appearances of one and the same reality is almost a philosophic axiom; but the discovery that "We may not conceive of a body as having physical reality unless the velocities of a given point as seen by two different observers are related by Einstein formulæ''[13] is not in itself sufficient to revolutionize our previous conceptions of the nature of that reality. In the same sense "Riemann never speaks of space itself as being non-Euclidean. He carefully refers always to metric relations.''[14]

This consideration applies even to that most elusive of all physical reals, ether. It is notorious that it has hitherto proved impossible to attribute to it properties free from self-contradiction when taken all together; and it may be completely dispensed with when phenomena are reduced to the abstract level of motions which, as occurring in different physical systems, are expressed by Einstein formulæ. But with the reintroduction of energy and its correlative concepts conditions are profoundly different; "the propagation of light . . . will always be sufficient ground for belief in some reality by means of which the transmission is effected. The ether must be rehabilitated.''[15]

Precisely the same holds true, *mutatis mutandis*, with regard to gravitation. The famous Principle of Equivalence is exactly what it professes to be and nothing more—a principle of equivalence, but

[12] Cunningham, *op. cit.*, pp. 191, 157, 113.

[13] *Ibid.*, p. 162.

[14] *Nature*, May 20, 1920, p. 351.

[15] Cunningham, *loc. cit.*, p. 29. *Nature, loc. cit.*

not therefore of explanation. That changes in a gravitational field may be equally well expressed in terms of accelerations neither explains gravitation nor explains it away; as Brose points out, "Einstein does not seek to build up a model to explain gravitation, but merely proposes a theory of motions. He does not discuss forces as such."[16] Whatever gravitation is due to, it produces (of itself) accelerated motions which, when in different systems, are related by the formulæ of Einstein and Minkowski. If therefore within a non-gravitational system of bodies a gravitational field is suddenly created, an additional acceleration factor is thereby introduced into all the preëxisting motions, and the paths of light rays which previously appeared straight thereupon appear to be bent in varying degrees; and this change must appear to be ultimate because of the fundamental rôle, already alluded to, played by light and vision in normal experience.

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REVIEWS AND ABSTRACTS OF LITERATURE

The Making of Humanity. ROBERT BRIFFAULT. London: George Allen and Unwin Ltd. 1919. Pp. 371.

This volume is devoted to the thesis that human evolution is the making of humanity, and that rational thought is the primary means of this progress. By human evolution is meant the natural growth of human life from "troglodytic man" to a rationally organized social life which shall satisfy the demands of human life. And by humanity is meant this organized whole of human life, which is a real organic unit over and above the individual human organisms which compose it. This organism of humanity is, however, not something already existent as a finished fact, but something in process of making. The author's purpose is to describe *how* it is being made. This description naturally takes the form of a philosophy of history. The problem is: What has been the constant factor, the real cause of human progress?

Mr. Briffault briefly criticizes the "endogenous theories" which attempt to explain human progress by man's mental capacities or by his racial characteristics on the ground that since they neglect to take into account the conditioning factors of man's environment they merely argue in a circle. Human progress is not explained by arguing that man is by nature a progressive animal. "A real se-

[16] *The Theory of Relativity*, pp. 24, 25.

quence of cause and effect first becomes apprehensible when attention, instead of being centered on the mind and the race, is directed to the environment in relation to which they react and develop" (p. 37). But when we turn to the "exogenous theories," those of "geographic and economic determinism," they also are inadequate because they neglect the human factors. Geographical and economic changes can account for *changes* in human life, but not for a *continuous* progress. We never discover the real cause in the natural conditions of progress, inasmuch as a cause, at least when speaking of progressive processes, is more than a conditioning factor. It is a *constant factor*. Mere environmental changes can, therefore, never account for the continuity which seems to be a characteristic of human evolution.

An adequate cause can only be found by studying man in his reactions to his environments. It is in the field of human adaptation to environment that the real cause for progress is to be found. The author then attempts to prove that the type of reaction which he calls "rational thought" is the fundamental cause of human progress. For rational thought is man's peculiar adaptive mechanism. "All other factors have been, *not means or efficient causes of the process of progress, but conditions.* They have promoted progress or impeded it, sped it or retarded it, according as they have acted favorably or unfavorably upon the operation and development of rational thought. In no case is their relation to the fact of progress continuous and invariable; their influence may be at one time favorable and at another time unfavorable" (p. 51). "But its actual forward development, its progressive character is exclusively the effect of that particular instrument of adaptation by which the human race has been differentiated" (p. 51.) "Although no one perhaps will directly demur to the statement, when put in so many words, that man is first and foremost *homo sapiens,* that all his powers are dependent upon the rationality with which he employs them, and that he succeeds or fails according as he thinks and acts rationally or irrationally, yet many are quite prepared to uphold views directly implying an entirely different estimate of the sources of human power; and there is a deeply rooted and widespread disposition to disparage rational thought, and exalt at its expense other supposed powers and methods as the talismans of true human development" (pp. 52–53).

These quotations are, I think, sufficient to show the author's chief interest in writing the book. The book is an ardent plea for (rather than a sound demonstration of) the controlling power of rational thinking or intelligence. It is refreshing to read such a plea at a

time when the champions of other ways of salvation are so popular. Faith in intelligence is still on the defensive. The straight and narrow path of reason is still unattractive, and those who follow it are even fewer than those who preach it! And to-day it is decidedly unfashionable philosophy to be a "rationalist" or an "intellectualist."

But at least two of the reasons why these are usually terms of reproach are evident in this book. First, the preachers of rational thought so readily beg the question. They assume that it is fairly obvious which opinion of a number of opinions is the rational one. To condemn thinking because it is irrational is the easy and obvious thing to do. But it usually throws little light on the real problem, which is: *Why* is it irrational? After all few people are willing to champion unreasonableness. I say unreasonableness rather than irrationality, because those who pride themselves on being "antirationalists" usually do so on the grounds that rationalism is unreasonable. And it is precisely because rationalism has been both more and less than the defense of "reasonableness," that it has become discredited. Mr. Briffault's book seems to me to be open to this fundamental objection. It has much to say about the value of rational thought; but little to say about its concrete definition. The former might nowadays be taken for granted; the latter is a vital and difficult problem.

In answer to this charge Mr. Briffault would, of course, refer to his chapters on "Rational Thought, Its Origins and Functions," and to his chapters on "Custom-Thought" and "Power-Thought." But I doubt whether a study of these chapters will throw much light on the problem. Rational thought, for example, is defined as "an adaptation of the organism to the most general and fundamental characters of man's external environment" (page 48). And again in more detail: "Rational thought is the human improvement on the biological method of trial and error; a perfected, economical, immensely more effective form of it. If one course of action proves successful and another fails *there is a reason for it.* If sufficient knowledge had been taken, it would have been possible to know beforehand which was the rational and which the irrational course. The successful result is that to which efficient thought would have led, had it been applied. With the growth of rationality, the development of experience, of available data, and of the habit of rational thought, its powers contribute more and more to the results of the method of trial and error, shorten and facilitate and economize its waste in an increasing degree. The sphere of that method becomes narrowed, that of rational thought extended. The more efficient method of adaptation tends constantly to prevail" (p. 55). Now that may all be true enough, but how does it help us in evaluating the rationality

of current doubtful opinions? It is all *ex post facto*. It is a fairly simple matter to see one's mistakes after they have been made, but it is another matter to acquire the capacity of avoiding mistakes. To say that "the successful result is that to which efficient thought would have led, had it been applied," is mere mockery. Mr. Briffault has little trouble in exposing to ridicule the irrationalities revealed in human history, and to point the moral that if people had been more rational more progress would have been made. (Of course it would, *by definition!*) But that still leaves the real problem of discovering the technique of rationality. How are opinions to be evaluated?

Mr. Briffault does not leave this question entirely unanswered; he makes two practical suggestions for the evaluation of thought. According to him the two most persistent and vicious forms of irrational thought are custom-thought and power-thought. Custom-thought is thinking dominated by tradition, habit, dogmatism. Power-thought is thinking dominated by the exercise of power of one individual or class over others. Custom-thought takes its rise in the earliest forms of primitive thinking. Power-thought is a product of the ever-increasing differentiation of society into classes and conflicting interests, and the consequent wielding of power by some over others. As this process continues, power-thought becomes more and more prevalent.

The history of human progress is the story of the conflict of rational thought with these two types of irrationality.[1] In every case where progress has been thwarted, one or both of these two will be found responsible. And wherever progress is made, it will be found to consist of a victory of rational thought over these. Part II., "The Genealogy of European Morals," is devoted to the elaboration of this idea. And it is in this part that the author makes his own contribution to the philosophy of history. His purpose is to show how European history illustrates the progressive power of rational thought over custom- and power-thought.

The story falls into two main parts—the Ancient, or Græco-Roman phase of civilization, and the Modern. I quote the author's own summary of the "ancient phase," which is admirable for its brevity and clarity: "Three broadly distinguished stages mark the course of human evolution. First, the long primitive tribal stage in which custom-thought ruled absolute, broken only now and again, and only to be renewed with but slightly weakened force, by material discover-

[1] Theoretically, of course, custom-thought and power-thought need not be irrational, and certainly are not in many cases. (I suspect that the struggle between the capitalists and the proletariat is such a case in the author's own mind!) Mr. Briffault does not justify his assumption of their irrationality theoretically. Whatever justification it may have lies in its practical utility.

ies and the clash of cultures. To that original phase succeeded that of the great oriental civilizations wholly dominated by theocratic power-thought whose absolutism is only occasionally and ineffectually challenged by military power, and which, owing to its greater subtlety of direction and elasticity of interpretation, virtually nullifies the disruptive effects of crossfertilization. Thirdly comes the extraordinarily felicitous accident of Greece, which at a blow almost completely liberates the human mind from custom- and power-thought, and raises it to undreamed-of heights of power and unfettered efficiency. But while it utilizes all the available data of rational thought, it contributes little to their increase, and its poverty in that respect cripples the power which it derives from freedom. The world contains as yet too much barbarism and too much orientalism; and the Græco-Roman phase of civilization succumbs at last to a gigantic tide of these elements which submerge and overwhelm it. It is eventually succeeded by a fourth phase, the one in which we live" (p. 162).

This fourth or modern phase is in every sense a new development. It is usually supposed to begin with a "renaissance," a rebirth of the intellectual life of the ancients. But the author finds in the *"soi disant renaissance"* an obstacle rather than a cause of progress. It was thoroughly dominated by custom-thought, and hence pedantic and artificial to the core. The real rebirth of Europe is to be attributed to other causes: (1) to the development of natural science among the Arabs and Moors and its spread in Europe; (2) to the commercial revolution; (3) to the force of reason revealing the romantic inconsistencies of the medieval theology which it had itself erected. The reason these forces have not made more progress than they have is to be sought in the fact that the political history of Europe is nothing more than a story of the conflicts of various powers, each dominated exclusively by power-thought. There was first the theocratic power struggling against the power of kings, followed by the struggle of the kings against the unruly power of the moneyed classes; and this in turn followed by the struggle for power between the bourgeoisie and the proletariat. All these struggles are shot through with duplicity, trickery and treachery, which when "divested of those decent veils with which its nakedness is customarily disguised by the reflections of power-thought appear to be conducive to a Yahoo view of humanity" (p. 246). It is this fact of European history which has made it impossible for morals to gain a foothold in the practical control of European society. Ethics has been forced to remain theoretical and speculative; morals are supposed to have nothing to do with politics. But in spite of this, morality has

evolved steadily and is increasingly becoming a controlling factor in life. It has thus evolved precisely because it is a form of *rational* thought. "Moral progress has in every case consisted not in a development of feeling, but in a development of thought; the rational evolution has preceded and brought about the ethical evolution" (p. 300). "So long as the extra-rational foundations of privilege were unquestioningly accepted, claims to equality, to right, to justice, could not and did not arise. So long as the divine nature of kingship was undisputed, every abuse of tryanny could exist unchallenged, so long as feudal power was looked upon as part of a superhumanly established order, every excess to which unchecked authority gives rise could proceed unquestioned. It is only when they have come to perceive that what they regarded as a sacred truth was a lie, that what they had been taught to look upon as right was iniquitous wrong, it is then only that the injured have rebelled. It is the exposure of the basic irrationality of the justifying lie, which brings about the overthrow of the abuse. The oppressed have only revolted against tyranny or injustice, however atrocious, when they have clearly perceived it as irrational, mendacious, false" (p. 282).

This illustrates the second reason for objecting to this type of rationalism. It not only begs the question, but it also shifts its ground from a defense of rational thought as the only rational basis for moral life, to the rationalization of history. It is one thing to show the futility of an irrational social life, and it is another thing to maintain that *historically* its irrationality has been the cause of its futility. I have my suspicions about any monistic philosophy of history, but it seems to me much easier to justify an economic interpretation of history, than a "rationalistic." Usually the economic consequences of an abuse are more potent and primary forces for progress than its intellectual consequences. Mr. Briffault appears to me here to be involved in a *post hoc ergo propter hoc* fallacy. It is the counter-fallacy to what he calls the "misological" fallacy. Consequently it seems to me that *The Making of Humanity* is valuable not so much as a philosophy of history as for the light it throws on many of our moral distinctions. For instance, one can not read the book without coming to a fresh realization of the tremendous influence of "power-thought" on our moral ideas, especially the idea of "corruption." Likewise, one can not read the chapter on "Current Opinion on Opinions" without coming to a fresh realization of the vogue of the "misological" fallacy. It is impossible here even to indicate the many clever ideas in which the book abounds. It is unfortunate that they are so often concealed by a needlessly pompous and repetitious style.

There is one contradiction which runs through the entire book, and which is theoretically fundamental. On the one hand the author speaks of the moral law as a natural law, of progress as an inevitable accompaniment of human evolution, of natural selection, *etc.* On the other hand the author speaks of the control of evolution, and makes a plea for education, closing with this sentence: "In the phase which its evolutionary aims have reached the first indispensable reform which must precede or accompany all others, if they are to be aught but stages in the long process of trial and failure, is an organized effort to provide for the handing down with untampering honesty the full measure of those powers which man has acquired, and to transmit them to the race. Failing such a provision, troglodytism and medievalism must necessarily continue with us, and all attempts to shake off the dead hand of unburied evil must remain essentially ineffectual" (p. 371). To me this seems to raise the question of what after all is meant by evolution and laws of nature, *etc.* I think we owe a vote of thanks to Mr. Briffault for bringing out this contradiction, or at least this ambiguity so obviously and frankly.

Mr. Briffault's book, however, deserves more positive justification than that. In a time when the protagonists of intelligence are obviously disheartened, when courage is failing, to bring forth an enthusiastic defense of the power of reason is a real service.

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JOURNALS AND NEW BOOKS

THE AMERICAN JOURNAL OF PSYCHOLOGY. October, 1920. *An Experimental Study of Visual Movement and the Phi Phenomenal* (pp. 317–332): F. L. DIMMICK. – The integration of a time and quality element in a gray flash gives the perception of movement in vision. *A Psychological Interpretation of Modern Social Problems and of Contemporary History: A Survey of the Contributions of Le Bon* (pp. 333–369): HARRY ELMER BARNES. – Le Bon was not an accurate social scientist but suggested some valuable theories. He emphasized psychic traits as being the determining factors of society rather than institutions. Some of the traits named are mysticism, racial tendencies and national characteristics. *A Psycho-Analytical Study of Edgar Allen Poe* (pp. 370–402): LORINE PRUETTE. – Poe as an only boy had many weaknesses of an only child. His poetry shows a high degree of introversion and flight from reality. *Minor Studies from the Psychological Laboratory of Clark University. Highest Audible Tones from Steel Cylinders* (pp. 403–406): C. C. PRATT. The limen is something less than

20,000, with smaller individual variations than in the use of the Galton whistle. *Book Notes.* M. M. Knight, Iva L. Peters and Phyllis Blanchard, *Taboo and Genetics.* Sigmund Freud, *A General Introduction to Psychoanalysis.* H. L. Hollingworth, *The Psychology of Functional Neuroses.* Wilfred Lay, *Man's Unconscious Passion.* William McDougall, *The Group Mind.* Henri Bergson, *Mind and Energy.* George Lansing Raymond, *Ethics and Natural Law.* Irwin Edman, *Human Traits and Their Social Significance. Proceedings of the International Conference of Women Physicians.* Bernard Muscio, *Industrial Psychology.* Henry Lane Eno, *Activism.* Dorothy Tudor Owen, *The Child Vision.* Julius Magnussen, *God's Smile.* J. W. McSpadden, *Famous Psychic Stories.* Orison Swett Marden, *Success Fundamentals.*

Gollancz, Hermann. Translation of Dodi Ve-Nechdi (Uncle and Nephew) by Berachya Hanakdan, and of Abelard of Bath's Quaestiones Naturales. Oxford: University Press. 1920. Pp. xxii + 161.

Janet, Charles. Considérations sur l'Être Vivant. Première Partie: Résumé préliminaire de la Constitution de l'Orthobionte. Beauvais: A. Dumontier. 1920. Pp. 80.

Sortais, Gaston. La Philosophie Moderne depuis Bacon jusqu'à Leibniz. Tome premier. Paris: P. Lethielleux. 1920. Pp. 592. 20 fr.

NOTES AND NEWS

In a paper entitled "Cosmic Evolution," read before the Aristotelian Society, March seventh, Professor J. E. Boodin advanced the hypothesis of cosmic interaction to account for the evolutionary series on our earth. Modern science and modern philosophy agree in treating the evolution of our earth as an independent drama. The later levels of evolution are supposed by some magic to emerge from the earlier—life from matter, thought from reflex action. Some have attempted to introduce a *plus* principle such as an *élan vital* or entelechy. But such a principle would have to be present from the beginning, thus antedating life. It would have to account for the reversed or alternating directions of evolutionary series, and sometimes it would have to lie dormant for long periods of time. It is at best an abstraction of the fact that certain processes have direction. It does not explain the fact. For this we need a cosmic dynamics, and this is found in interaction. Interaction is not merely a speculative principle. The discovery of interaction has

revolutionized our conception of the organism. We have long known about neural messengers, but lately we have discovered that the process of growth, proportion and assimilation are controlled by chemical messengers in the form of secretions carried in the blood. Thus secretions from the thyroid and parathyroid glands control the process of growth and proportion of the organism. In the cosmic continuum we are familiar with certain interactions that control the movements of the heavenly bodies in space. Radiant heat and light, without which our earth would be dead and void, are communicated from the sun and distant stars. Is it not reasonable to suppose that the movement of our earth in time as well as in space is controlled through its interactions with the larger cosmos? Only so can we account for the appearance of life as a new type of energy pattern. It is equally impossible to explain the evolution of our sense organs without taking account of the principle of interaction. No reasonable man could hold that our complicated organs of sight and hearing are developed by chance in the organism without reference to the cosmic environment. It is safe to say that if there were no light patterns there would be no eyes; if there were no sound patterns there would be no ears. Through a long trial-and-error process and under the control of cosmic patterns the organism develops the appropriate instruments to respond in specific and differential ways to the cosmos. And what shall we say of the various levels of control within the organism? Can we account for the unique type of pattern of creative thought and its control of the lower levels by a chance combination of reflex arcs? Here too we must invoke the principle of cosmic interaction. The development of the organism to think is due as truly to thought patterns communicated through the cosmic continuum as the development of seeing is due to the light patterns acting upon organic matter. And thought patterns like light patterns must be communicated from other worlds that are of a level to emit such patterns. We know no other way. In neither case is it the act of thinking or seeing which is communicated. This is due to the interaction of the respective patterns with matter and its properties.